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EXAMINER	
HUANG, WEN WU	
ART UNIT	**PAPER NUMBER**
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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/771,757	PERIC, SINISA	
	Examiner	Art Unit	
	Wen W. Huang	2618	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-53 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-53 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

Claims 12, 33 and 48 are objected to because of the following informalities:

Regarding claims 12 and 33, the data generated from the operation i) lacks antecedent basis. Regarding claim 48, the data generated from the operation f) lacks antecedent basis. Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

1. Claims 1, 2, 7-10, 12-16, 21, 22, 27-31, 33-37, 42, 44-46, 48 and 49 are rejected under 35 U.S.C. 102(e) as being anticipated by Sander et al. (US Pub No. 2004/0132457 A1; hereinafter "Sander")

Regarding **claim 1**, Sander teaches a method for measurement and identification of base stations transmitting on the same channel, thus interfering with each other, in a

GSM cellular wireless network wherein a plurality of base stations each transmit a 51-multiframe signal including a plurality of FCCH bursts, a plurality of SCH bursts and a plurality of BCCH bursts (see Sander, para. [0009] and [0012]), the method comprising:

a) receiving signals within the intended coverage zone of the GSM cellular wireless network (see Sander, para. [0035], lines 1-4 and para. [0036], line 7);

b) correlating the received signals with an FCCH burst waveform signal to identify a set of FCCH correlation peaks therein (see Sander, para. [0046], lines 4-8 and para. [0083]);

c) for each given FCCH correlation peak within said set of FCCH correlation peaks, generating data representing time-of-arrival and power level for the given FCCH correlation peak, and adding said data to a data file (see Sander, para. [0046], lines 11-14);

d) for at least one given FCCH correlation peak within said set of FCCH correlation peaks, scheduling SCH burst decoding operations for a time window derived from the time-of-arrival of the given FCCH correlation peak (see Sander, para. [0086], lines 5-7);

e) performing SCH burst detection and decoding operations on said signals during each time window scheduled in d) to thereby identify BSIC data and RFN data encoded in a given SCH burst detected within said signal (see Sander, para. [0048]), and adding time-of-arrival data, said BSIC data and a frame number data based on said RFN data for the given SCH burst to the data file (see Sander, para. [0093], lines 8-15); and

f) for each given SCH burst successfully detected and decoded in e), identifying a plurality of time-of-arrival windows within the 51-multiframe based upon the time-of-arrival data and frame number data of the given SCH burst, and updating the data file to associate the BSIC data and frame number data for the given SCH burst with the power level data for each FCCH correlation peak whose time-of-arrival falls within said plurality of time-of-arrival windows of the 51-multiframe (see Sander, para. [0046], lines 11-14, para. [0093], lines 16-21 and para. [0095], lines 1-4).

Regarding **claim 2**, Sander also teaches a method according to claim 1, further comprising: g) for each given SCH training sequence successfully detected in e), updating the time-of-arrival data for the preceding FCCH burst based upon the time-of-arrival of the given SCH burst (see Sander, fig. 11, para. [0081]).

Regarding **claim 7**, Sander also teaches a method according to claim 1, wherein: said plurality of time-of-arrival windows comprise 5 time windows within the any 51-multiframe (see Sander, fig. 5, component 504 and para. [0053], lines 4-14).

Regarding **claim 8**, Sander also teaches a method according to claim 1, wherein: time-of-arrival data for a given SCH burst is normalized to the preceding FCCH burst frame (see Sander, fig. 11, para. [0081]).

Regarding **claim 9**, Sander also teaches a method according to claim 1, wherein: time-of-arrival data for respective FCCH bursts and SCH bursts in addition to said plurality of time-of-arrival windows are defined by a timing reference (see Sander, fig. 8, component 815, para. [0075]) signal with a period of one or multiple GSM 51-multiframes (see Sander, para. [0093], lines 16-21).

Regarding **claim 10**, Sander also teaches a method according to claim 9, wherein said timing reference signal is generated internally and synchronized to a GPS signal (see Sander, para. [0075]).

Regarding **claim 12**, Sander also teaches a method according to claim 1, wherein: data generated from the operations of a) through e) is accessed for post-processing analysis (see Sander, fig. 7, component 720 and para. [0065], lines 13-15).

Regarding **claim 13**, Sander also teaches a method according to claim 12, wherein: said post-processing analysis performs at least one of network optimizations, frequency planning, co-channel interference analysis, and adjacent-channel interference analysis (see Sander, para. [0089]).

Regarding **claim 14**, Sander also teaches a method according to claim 1, wherein: the data representing power level for the given FCCH correlation peak is a

measure of absolute power and relative power of the given FCCH correlation peak (see Sander, para. [0059]).

Regarding **claim 15**, Sander also teaches a method according to claim 1, wherein: the operations in d) are performed for each FCCH correlation peak that crosses a certain relative power threshold (see Sander, fig. 15, component 1535 and para. [0059]).

Regarding **claim 16**, Sander also teaches a method according to claim 1, wherein: the time window of d) encompasses one frame after the time-of-arrival of the given FCCH correlation peak (see Sander, para. [0081] and para. [0086], lines 5-7).

Regarding **claim 21**, Sander teaches a data analysis tool (see Sander, fig. 7) that measures and identifies base stations transmitting on the same channel, thus interfering with each other, in a GSM cellular wireless network wherein a plurality of base stations each transmit a 51-multiframe signal including a plurality of FCCH bursts, a plurality of SCH bursts and a plurality of BCCH bursts (see Sander, para. [0009] and [0012]), the data analysis tool comprising:

a) means for receiving signals within the intended coverage zone of the GSM cellular wireless network (see Sander, para. [0009] and [0012]);

b) means for correlating the received signals with an FCCH burst waveform signal to identify a set of FCCH correlation peaks therein (see Sander, para. [0046], lines 4-8 and para. [0083]);

c) means for generating data representing time-of-arrival and power level for each given FCCH correlation peak within said set of FCCH correlation peaks, and adding said data to a data file (see Sander, para. [0046], lines 11-14);

d) means for scheduling SCH burst decoding operations for a time window derived from the time-of-arrival for at least one given FCCH correlation peak within said set of FCCH correlation peaks (see Sander, para. [0086], lines 5-7);

e) means for performing SCH burst detection and decoding operations on said signals during each time window scheduled by d) to thereby identify BSIC data and RFN data encoded in a given SCH burst detected within said signal (see Sander, para. [0048]), and for adding time-of-arrival data, said BSIC data and a frame number data based upon said RFN data for the given SCH burst to the data file (see Sander, para. [0093], lines 8-15); and

f) means for identifying a plurality of time-of-arrival windows within the 51-multiframe of each given SCH burst successfully detected and decoded by e), and for updating the data file to associate the BSIC data with the power level data for each FCCH correlation peak whose time-of-arrival falls within said plurality of time-of-arrival windows within the 51-multiframe of the given SCH burst (see Sander, para. [0046], lines 11-14, para. [0093], lines 16-21 and para. [0095], lines 1-4).

Regarding **claims 22, 27-30 and 33-37** are interpreted and rejected for the same reasons as set forth above in the claims 2, 7-10 and 12-16, respectively above.

Regarding **claim 31**, Sander also teaches a data analysis tool according to claim 30, further comprising: an oscillator circuit for generating a timing signal that is synchronized to said GPS signal (see Sander, fig. 2, component 215); and wherein said timing reference signal is derived from said timing signal generated by said oscillator circuit (see Sander, fig. 8, component 815 and para. [0075]).

Regarding **claim 42**, Sander teaches a method for measurement and identification of base stations transmitting on the same channel, thus interfering with each other, in a cellular wireless network wherein downstream signals from base stations to users are communicated in frames and include fixed signal waveforms and information that identifies base stations (see Sander, para. [0009] and [0012]), the method comprising:

a) receiving signals within the intended coverage zone of the cellular wireless network (see Sander, para. [0009] and [0012]);

b) detecting known signal waveforms in the received signals (see Sander, para. [0046], lines 4-8 and para. [0083]);

c) for each detected signal waveform, logging time-of-arrival and power level data for the detected signal waveform to a data file (see Sander, para. [0046], lines 11-14);

d) detecting and decoding data that identifies a base station in the cellular wireless network (see Sander, para. [0048]); and

e) identifying a plurality of time-of-arrival windows based on data generated in d), and updating the data file to associate the data generated in d) with power level data of detected signal waveforms whose time-of-arrival falls within said plurality of time-of-arrival windows (see Sander, para. [0046], lines 11-14, para. [0093], lines 16-21 and para. [0095], lines 1-4).

Regarding **claim 44**, Sander also teaches a method according to claim 42, wherein: the power level data for the detected signal waveform is a measure of absolute power and relative power of the detected signal waveform (see Sander, para. [0059]).

Regarding **claim 45**, Sander also teaches a method according to claim 42, wherein: the detected signal waveform comprises one of a synchronization waveform and a training sequence waveform transmitted by a base station (see Sander, fig. 11).

Regarding **claim 46**, Sander also teaches a method according to claim 42, wherein time of arrival is referenced to a timing reference signal generated internally and synchronized to a GPS signal; sad timing referenced signal having period of one of multiple frames (see Sander, fig. 2, component 215, fig. 8, component 815 and para. [0075] and [0095]).

Regarding **claim 48**, Sander also teaches a method according to claim 42, wherein: data generated from the operations of a) through e) is accessed for post-processing analysis (see Sander, fig. 7, component 720 and para. [0065], lines 13-15).

Regarding **claim 49**, Sander also teaches a method according to claim 48, wherein: said post-processing analysis performs at least one of network optimizations, frequency planning, co-channel interference analysis, and adjacent-channel interference analysis (see Sander, para. [0089]).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 3, 4, 6, 11, 17-20, 23, 24, 26, 32, 38-41, 43, 47 and 50-53 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sander as applied to claims 2, 22 and 42 above, and further in view of Monot et al. (US. 6,349,207 B1; hereinafter "Monot")

Regarding **claim 3**, Sander teaches a method according to claim 2.

Sander is silent to teaching that further comprising:

h) for each given SCH burst successfully detected and decoded in e), scheduling BCCH burst detection and decoding operations for a time window derived from the time-of-arrival data and frame number data of the given SCH burst;

i) performing BCCH burst detection and decoding operations on said signals during the time window scheduled in h) to thereby identify BCCH information encoded in a set of BCCH bursts detected within said signal, and adding said BCCH information to the data file; and

j) updating the data file to associate the BCCH information identified in i) with data components for the given SCH burst from which the BCCH information is derived. However, the claimed limitation is well known in the art as evidenced by Monot.

In the same field of endeavor, Monot teaches a method for measurement and identification of base stations transmitting on the same channel, thus interfering with each other, in a GSM cellular wireless network wherein a plurality of base stations each transmit a 51-multiframe signal including a plurality of FCCH bursts, a plurality of SCH bursts and a plurality of BCCH bursts (see Monot, col. 2, lines 24-30), the method comprising:

h) for each given SCH burst successfully detected and decoded in e), scheduling BCCH burst detection and decoding operations for a time window derived from the time-of-arrival data and frame number data of the given SCH burst (see Monot, fig. 7, components 9-11 and col. 5, lines 56-61);

i) performing BCCH burst detection and decoding operations on said signals during the time window scheduled in h) to thereby identify BCCH information encoded in

a set of BCCH bursts detected within said signal, and adding said BCCH information to the data file (see Monot, fig. 7, components 12 and 13 and col. 6, lines 24-30); and

j) updating the data file to associate the BCCH information identified in i) with data components for the given SCH burst from which the BCCH information is derived (see Monot, col. 4, lines 57-61).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to combine the teaching of Sander with the teaching of Monot in order to provide analysis of co-channel interference in a cellular radio communication system (see Monot, col. 2, lines 24-25).

Regarding **claim 4**, the combination of Sander and Monot also teaches a method according to claim 3, wherein: the operations in f) update the data file to associate the BCCH information corresponding to the given SCH burst with the power level data for each FCCH correlation peak whose time-of-arrival falls within said plurality of time-of-arrival windows of the 51-multiframe (see Monot, col. 4, lines 57-61, fig. 12 and 13).

Regarding **claim 6**, the combination of Sander and Monot also teaches a method according to claim 4, wherein: said plurality of time-of-arrival windows comprise 5 time windows within any 51-multiframe (see Monot, fig. 9).

Regarding **claim 11**, the combination of Sander and Monot also teaches a method according to claim 3, wherein: the operations of a) through e) and g), h), and i)

are performed as part of a real-time data acquisition and analysis phase, and the operations of f) and j) are performed as part of an offline data analysis phase (see Sander, fig. 7 and para. [0065]).

Regarding **claim 17**, the combination of Sander and Monot also teaches a method according to claim 3, wherein: the operations of a) through j) are performed as part of a real-time data acquisition and analysis phase (see Sander, fig. 7, component 705 and para. [0065]).

Regarding **claim 18**, the combination of Sander and Monot also teaches a method according to claim 17, further comprising: displaying in real-time power level data for each FCCH correlation peak identified in b) (see Sander, para. [0089]).

Regarding **claim 19**, the combination of Sander and Monot also teaches a method according to claim 18, further comprising: updating the display in real-time to display at least one of BSIC data and BCCH information detected and associated with a given FCCH correlation peak along with said power level data for the given correlation peak (see Sander, para. [0088] and [0089]).

Regarding **claim 20**, the combination of Sander and Monot also teaches a method according to claim 19, further comprising: updating the display in real-time to display power level data for each detected FCCH correlation peak in accordance with

measured changes in said power level data over time (see Sander, para. [0088] and [0089]).

Regarding **claims 23, 24, 26, 32 and 38-41**, the dependent claims are interpreted and rejected for the same reasons as set forth above in claims 3, 4, 6, 11 and 17-20, respectively above.

Regarding **claim 43**, Sander teaches a method according to claim 42.

Sander is silent to teaching that further comprising:

f) detecting and decoding additional information that uniquely identifies the base station, and adding said additional information to the data file; and

g) updating the data file to associate the additional information identified in f) with data components for corresponding detected signal waveforms. However, the claimed limitation is well known in the art as evidenced by Monot.

In the same field of endeavor, Monot teaches a method (see Monot, col. 2, lines 24-30) comprising:

f) detecting and decoding additional information that uniquely identifies the base station, and adding said additional information to the data file (see Monot, fig. 7, components 12 and 13 and col. 6, lines 24-30); and

g) updating the data file to associate the additional information identified in f) with data components for corresponding detected signal waveforms (see Monot, col. 4, lines 57-61).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to combine the teaching of Sander with the teaching of Monot in order to provide analysis of co-channel interference in a cellular radio communication system (see Monot, col. 2, lines 24-25).

Regarding **claims 47 and 50-53**, the dependent claims are interpreted and rejected for the same reasons as set forth above in claims 11 and 17-20, respectively above.

3. Claims 5 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sander and Monot as applied to claims 4 and 24, respectively above, and further in view of Martin-Leon et al. (US Pub No. 2001/0016490 A1; hereinafter "Martin-Leon")

Regarding **claim 5**, the combination of Sander and Monot teaches a method according to claim 4, wherein: said BCCH information includes a Cell Identifier (CellId) and a Location Area Code (LAC) assigned to a given base station transmitting the 51-multiframe signal (see Monot, col. 5, lines 20-22).

The combination of Sander and Monot is silent to teaching that wherein: said BCCH information includes Mobile Network Code (MNC) and Mobile Country Code (MCC) assigned to a given base station transmitting the 51-multiframe signal. However, the claimed limitation is well known in the art as evidenced by Martin-Leon.

In the same field of endeavor, Martin-Leon teaches a method and apparatus wherein said BCCH information includes Mobile Network Code (MNC) and Mobile Country Code (MCC) assigned to a given base station transmitting the 51-multiframe signal (see Martin-Leon, para. [0071]).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to combine the teaching of Sander and Monot with the teaching of Martin-Leon in order to identify co-channel interference and increase capacity (see Martin-Leon, para. [0003]).

Regarding **claim 25**, the dependent claim is interpreted and rejected for the same reason set forth above in claim 5.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Abbadessa (US. 6,192,244 B1) teaches a method of analyzing lists of neighboring cells.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Wen W. Huang whose telephone number is (571) 272-7852. The examiner can normally be reached on 10am - 6pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nay A. Maung can be reached on (571) 272-7882. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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9/14/06

Quochien B. Vuong 9/18/06

QUOCHIEN B. VUONG
PRIMARY EXAMINER